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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/688,202	10/17/2003	James C. Payne	PAYN.001CIP	6661
40581	7590	04/04/2005		
CRAWFORD MAUNU PLLC 1270 NORTHLAND DRIVE, SUITE 390 ST. PAUL, MN 55120			EXAMINER GRANT, ROBERT J	
			ART UNIT	PAPER NUMBER
			2838	

DATE MAILED: 04/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/688,202

Applicant(s)

PAYNE, JAMES C.

Examiner

Robert Grant

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM  
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 October 2003.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-6 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 10-17-03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Double Patenting*

1. Claims 1,2, and 5 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,636,014 in view of Landon (US 6,198,251). Although the conflicting claims are not identical, they are not patentably distinct from each other because Patent number 6,636,014, claim 1, discloses an arrangement for charging an equipment battery, the arrangement comprising a primary battery, and the arrangement is adapted to charge the equipment battery by a power connection from the primary battery to the equipment battery. Claim 1 does not expressly disclose charging a plurality of batteries and a charging circuit that automatically provides charge to each of the plurality of batteries one battery at a time. Landon discloses charging a plurality of batteries (Column 4, lines 3-7), and a charging circuit that automatically provides charge to each of the plurality of batteries (Figure 1), one battery at a time. It would have been obvious at the time of this invention to modify the apparatus to allow it to provide charge to a plurality of batteries as well as automatically alter the connections from one of the equipment batteries to the next in order to charge all the batteries without having to physically change the connection.

As to Claim 2, Patent number 6,636,014 in view of Landon disclose the limitations of claim 1, and further including a wiring harness assembly (Landon figure 2)

adapted to permit charging of the plurality of equipment batteries while the batteries are being towed (Claim 1, lines 1-3).

As to Claim 5, Patent number 6,636,014 in view of Landon disclose all the limitations of claim 2, and further disclose wherein the charging circuit automatically stops charging one of the equipment batteries and begins charging another of the equipment batteries in response to an indication that said one of the equipment batteries has reached a sufficiently-charged threshold level (Landon Column 4, lines 5-9).

2. Claim 3 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,636,014 in view of Landon in further view of Matsuda (US 5,563,493). As to Claim 3, Patent number 6,636,014 in view of Landon disclose all the limitations of claim 2. Patent number 6,636,014 in view of Landon do not expressly disclose wherein the charging circuit automatically stops charging one of the equipment batteries and begins charging another of the equipment batteries according to a circuit-defined time interval. Matsuda discloses wherein the charging circuit automatically stops charging one of the equipment batteries by using a circuit-defined time interval (column 8, lines 33-37). It would have been obvious to a person having ordinary skill in the art at the time of this invention to incorporate the teachings of Matsuda with the sequential charger apparatus, for the benefit of having an accurate time controlled charging method, and

charging individual batteries for a predetermined period before switching to the next battery.

3. Claim 4 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,636,014 in view of Landon in further view of Kan et al. (US 5,168,205). As to Claim 4, Patent number 6,636,014 in view of Landon disclose all the limitations of claim 2. Patent number 6,636,014 in view of Landon do not expressly disclose wherein the charging circuit automatically stops charging one of the equipment batteries and begins charging another of the equipment batteries according to a user-established time interval. Kan discloses wherein the charging circuit automatically stops charging one of the equipment batteries according to a user-established time interval (Column 9, lines 16-20). It would have been obvious to a person having ordinary skill in the art at the time of this invention to combine Kan's timer with sequential charging apparatus in order to grant the user control of how long he wants the battery to charger before switching to the next battery.

4. Claim 6 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,636,014 in view of Landon in further view of Kan and Rogers (US 5,528,148) As to Claim 6, Patent number 6,636,014 in view of Landon disclose all the limitations of claim 2. Patent number 6,636,014 in view of Landon do not expressly disclose wherein the charging

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circuit automatically stops charging one of the equipment batteries and begins charging another of the equipment batteries at a time that is defined as a function of a user-defined expected travel time. Kan teaches a method of using a user set timer to control the length of charging (Column 9, lines 16-20). Rogers teaches of a battery monitoring and charging system where the estimated time of arrival is part of the information stored in vehicle memory (Column 16, lines 46-51). It would have been obvious to a person having ordinary skill in the art at the time of this invention to combine the teaching of Kan and Rogers to create a timing system that uses an inputted estimated time for arrival, and then use Landon's distributor to take the estimated time till arrive to provide charger to the batteries. This is a similar approach that Landon already discloses (Column 4, lines 15-22), with the exception that instead of using time to control the charging cycles he uses percentage charge. In a case where the time that power will be allotted to charge the batteries is know, it would be obvious to use timed cycles to sequentially charge the batteries, this would grant a more evenly distributed charge among the batteries by allowing them to charge an equal amount of time.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1,2, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lawrence (US 5,583,414) in view of Landon (US 6,198,251).

As to Claim 1, Lawrence discloses an arrangement for charging a plurality of equipment batteries (Figure 6), the arrangement comprising: a primary battery (element 12). Lawrence does not expressly disclose a charging circuit that is adapted to charge the equipment batteries by automatically alternating a power connection from the primary battery to each of the equipment batteries, one battery at a time. Landon discloses a charging circuit (figure 1) that is adapted to charge the equipment batteries by automatically alternating a power connection to each of the equipment batteries, one battery at a time (Column 4, lines 3-5). It would have been obvious to a person having ordinary skill in the art at the time of this invention to combine the teachings of Landon's sequential charging with Lawrence's system for charging a battery while in tow, by putting Landon's distributor in control of the charging of the batteries. This would have the benefit of greater control of the charging of the batteries, as well as allowing individual batteries to charge faster.

As to Claim 2, Lawrence in view of Landon disclose the limitations of claim 1, and further including a wiring harness assembly (Landon figure 2) adapted to permit charging of the plurality of equipment batteries while the batteries are being towed (Lawrence Figure 1).

As to Claim 5, Lawrence in view of Landon disclose all the limitations of claim 2, and further disclose wherein the charging circuit automatically stops charging one of the equipment batteries and begins charging another of the equipment batteries in

response to an indication that said one of the equipment batteries has reached a sufficiently-charged threshold level (Landon Column 4, lines 5-9).

7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lawrence in view of Landon as applied to claim 2 above, and further in view of Matsuda et al. (5,563,493).

As to Claim 3, Lawrence in view of Landon disclose all the limitations of claim 2. Lawrence in view of Landon do not expressly disclose wherein the charging circuit automatically stops charging one of the equipment batteries and begins charging another of the equipment batteries according to a circuit-defined time interval. Matsuda discloses wherein the charging circuit automatically stops charging one of the equipment batteries by using a circuit-defined time interval (column 8, lines 33-37). It would have been obvious to a person having ordinary skill in the art at the time of this invention to incorporate the teachings of Matsuda with the sequential charger of Lawrence in view of Landon, for the benefit of having an accurate time controlled charging method, and charging individual batteries for a predetermined period before switching to the next battery.

8. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lawrence in view of Landon as applied to claim 2 above, and further in view of Kan et al. (5,168,205).



As to Claim 4, Lawrence in view of Landon disclose all the limitations of claim 2. Lawrence in view of Landon do not expressly disclose wherein the charging circuit automatically stops charging one of the equipment batteries and begins charging another of the equipment batteries according to a user-established time interval. Kan discloses wherein the charging circuit automatically stops charging one of the equipment batteries according to a user-established time interval (Column 9, lines 16-20). It would have been obvious to a person having ordinary skill in the art at the time of this invention to combine Kan's timer with Lawrence in view of Landon's sequential charger in order to grant the user control of how long he wants the battery to charge before switching to the next battery.

9. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lawrence in view of Landon as applied to claim 2 above, and further in view of Kan and Rogers (US 5,528,148).

As to Claim 6, Lawrence in view of Landon disclose all the limitations of claim 2. Lawrence in view of Landon do not expressly disclose wherein the charging circuit automatically stops charging one of the equipment batteries and begins charging another of the equipment batteries at a time that is defined as a function of a user-defined expected travel time. Kan teaches a method of using a user set timer to control the length of charging (Column 9, lines 16-20). Rogers teaches of a battery monitoring and charging system where the estimated time of arrival is part of the information stored in vehicle memory (Column 16, lines 46-51). It would have been obvious to a person

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having ordinary skill in the art at the time of this invention to combine the teaching of Kan and Rogers to create a timing system that uses an inputted estimated time for arrival, and then use Landon's distributor to take the estimated time till arrive to provide charger to the batteries. This is a similar approach that Landon already discloses (Column 4, lines 15-22), with the exception that instead of using time to control the charging cycles he uses percentage charge. In a case where the time that power will be allotted to charge the batteries is know, it would be obvious to use timed cycles to sequentially charge the batteries, this would grant a more evenly distributed charge among the batteries by allowing them to charge an equal amount of time.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Grant whose telephone number is 571-272-2727. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on 571-272-2084. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RG

*Michael Sherry* 3/31/05

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